

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

LG DISPLAY CO., LTD.,

Plaintiff,

v.

CHI MEI OPTOELECTRONICS
CORPORATION, et al.

Defendants.

Civil Action No. 06-726 (JJF)

Civil Action No. 07-357 (JJF)

CONSOLIDATED CASES

**RESPONSE OF PLAINTIFF LG DISPLAY CO., LTD. TO
CMO'S OPENING CLAIM CONSTRUCTION BRIEF**

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Plaintiff LG Display Co., Ltd. (“LGD”) respectfully submits this brief in response to the opening claim construction brief of Defendants Chi Mei Optoelectronics Corporation and Chi Mei Optoelectronics U.S.A., Inc (collectively “CMO”).¹

I. CONSTRUCTION OF DISPUTED CLAIM TERMS OF THE LGD PATENTS

A. U.S. Patent No. 4,624,737 – the “Improved TFT” patent

CMO misconstrues the claim language and teachings of the specification and relies on extrinsic evidence to attempt to improperly limit the scope of the ‘737 patent. Further, CMO urges arguments that were already rejected by the California Court.

1. “oxidizing atmosphere” / “without exposing them to an oxidizing atmosphere”

CMO’s proposed construction of these terms is vague and overly broad. For example, it is unclear what an “uncontrolled ambient atmosphere” is. The ambient atmosphere in an LCD manufacturing clean room could be considered “controlled” and, therefore, be excluded from CMO’s construction. This is simply inconsistent with the ‘737 patent, and should be rejected.

2. “depositing on”

CMO’s construction of “depositing on” as requiring direct contact between the deposited films and the substrate is unduly narrow and inconsistent with the claim language. For example, claim 1 recites that the island region (etched from the high-resistivity semiconductor film and conducting film) is “on” the gate electrode. The island region, however, is clearly not in direct

¹ LGD refers herein to the exhibits through the Declaration of Adrian Mollo (designated L-1, L-2, *et seq.*), as filed in conjunction with LGD’s Opening Brief. LGD also makes reference to supplemental exhibits (designated L-35, L-36, *et seq.*), which are submitted concurrently herewith through the Supplemental Declaration of Adrian Mollo. Finally, as provided in its Opening Brief, LGD refers herein to the joint exhibits of the parties, which provide copies of the patents in suit (*e.g.*, JX A, JX B) and excerpts of the relevant prosecution histories (*e.g.*, JX C1, JX D1).

contact with the gate electrode because a high-resistivity semiconductor layer is deposited on a gate insulating layer before the films that form the island region are deposited. 4:27-32.

Accordingly, CMO's construction should be rejected.

3. *"gate insulating film"*

Again, CMO's proposed construction is overly narrow and ignores the constructions by the California Court. Instead, CMO seeks to interject unnecessary limitations by relying on transistor parameters, such as gate capacitance, nowhere described, let alone claimed, in the '737 patent. CMO's proposed construction should be rejected.

4. *"high resistivity semiconductor film" / "conducting film"*

CMO attempts to import unnecessary and unsupported limitations into these terms by requiring that the high-resistivity semiconductor film "act[] as a channel." CMO's attempt to add a functional limitation is improper and should be rejected. Furthermore, even CMO and its expert admit that only a portion of the high-resistivity semiconductor film actually acts as a channel. Moreover, Figures 3c and 3d of the patent clearly show that the high resistivity semiconductor film is not limited to the area between the source and drain, which means there are portions of the high-resistivity film that do not act as the channel. Thus, CMO's proposed construction is contrary to the language of the claims and the specification, which refer to the thickness of the material, and not just a portion thereof, as a high-resistivity semiconductor *film*. 2:20-30; 2:38-43; 3:28-30. Nothing in the intrinsic record supports limiting the "conducting film" or "high resistivity semiconductor film" to the channel. Additionally, CMO's construction is flawed because it seeks to preclude other materials as part of the channel. Yet even Dr. Hatalis's description suggests that the low-resistivity semiconductor film between the source and drain electrodes could also form part of the channel. Thus, CMO's attempt to limit the

conducting film to the region “adjacent to the channel” must fail as an improper importation of limitations that is unwarranted.

5. “said source and drain electrode serving as at least part of a mask” / “mask”

CMO merely reiterates the same arguments already rejected by the California Court. As discussed in LGD’s opening brief (D.I. 384 at 14-15), this argument must fail as it reads out of the claims the statement that the source and drain electrodes need serve as the mask *or* only as “part” of the mask. 4:39-42. Having ignored the claim language itself, CMO improperly relies on extrinsic evidence, a 2002 textbook *Introduction to Microelectronic Fabrication*, to describe an invention that was developed over 15 years before the book was published. Further, CMO’s citations do not even support its position, for nowhere does the text support the proposition that the term “said source and drain electrode serving as *at least part of a mask*” requires that the source and drain electrode be the top surface of the mask. As CMO’s construction clearly disregards the language of the claim it must be rejected.

6. “selectively removing” / “selectively removing said conducting film exposed on said island region”

Once again, CMO improperly relies on extrinsic evidence and ignores the plain language of the claims to import limitations into the claims. Nowhere do the claims suggest that the entire material between the “the space between the edge of the source and drain electrode” must be “eliminated.” Further, because the source and drain are not required to be the top surface of the mask, CMO’s narrow limitation that all of the conducting film “between the edges of the source and drain electrode” should be also rejected. CMO’s reliance on solely the figures to support its unduly limiting construction is clearly contrary to the principles of claim construction. Further, Dr.Hatalis’s declaration does not support CMO’s position as he describes a concern with shorting and cites that the specification addresses overetching. (D.I. 388 at ¶ 66.) Dr. Hatalis is

clearly referring to the removal of the *thickness of material*, not that the material be removed strictly between the edges of the source and drain electrodes. Thus, CMO's construction should be rejected as unduly limiting and not supported by the intrinsic or extrinsic evidence.

B. U.S. Patent No. 5,019,002 – the “ESD Protection” patent

CMO's constructions do not provide the necessary guidance to avoid the ambiguity that arose in the previous CPT litigation regarding the '002 patent. (D.I. 384 at 6-11.) CMO also disregards the intrinsic evidence and attempts improperly to narrow the claims. Moreover, CMO's argument that LGD is collaterally estopped from presenting constructions for “interconnecting” and “resistance” is flatly wrong because LGD had no opportunity to appeal the constructions in the CPT litigation. *See Graco Children's Products, Inc. v. Regalo Intern.*, 77 F. Supp. 2d 660 (E.D. Pa 1999)(citations omitted)(stating that “because [plaintiff] won on its claim of patent infringement, but lost on a claim interpretation issue, no issue preclusion attaches to the lost issue of claim interpretation since it could not by itself be appeal.”); *Kollomorgan Corp. v. Yaskawa Elec. Corp.*, 147 F. Supp. 2d 464, 468 (W.D. Va. 2001)(holding that collateral estoppel should not apply to an unappealable claim construction order).

CMO also incorrectly asserts that LGD should be judicially estopped from arguing any construction for “interconnecting substantially all of said row and column lines to one another and substantially all of said column lines to one another.” Again, CMO's arguments are misplaced. The Court did not rule on the terms and LGD's position here is not inconsistent with its earlier position on claim construction. Thus, CMO's arguments should be rejected.

1. *“interconnecting substantially all of said row and column lines to one another and substantially all of said column lines to one another”*

a. *“interconnecting”*

CMO argues that LGD’s construction “electrically connecting with conductive material” should be rejected. However, as discussed in LGD’s opening brief, given the unexpected disputes that arose at trial in the CPT litigation, LGD’s construction clarifies that interconnecting can include conductive materials that provide the necessary electrical conduction path to disperse electrostatic discharge in the TFT array. LGD’s construction is consistent with the specification as well as the prosecution history, and should be adopted. (D.I. 384 at 7-8.)

b. *“substantially all”*

CMO’s argument that the dictionary definition of “substantially” should limit the claims clearly ignores the teaching of the specifications. CMO also cites one definition of substantial but ignores more appropriate definitions. For example, the third definition in CMO’s cited dictionary defines substantially as “considerable in quantity; significantly great.” *See also* Ex. L-35 Merriam Webster’s New Collegiate Dictionary (1980)(defining substantial as “considerable in quantity; significantly large.”); Ex. L-36 The American Heritage Dictionary (1980)(defining substantial as “considerable in importance, value, degree, amount, or extent.”) These definitions would more accurately reflect the goal of the invention providing an electrical conduction path to eliminate shorts or defects in the display.

The specification provides additional guidance on the term “substantially.” The summary of the invention recites a method to “substantially eliminate fatal display defects caused by electrostatic discharge during manufacture and thereafter.” 2:49-52 Under CMO’s asserted definition, this would mean the method attempts to prevent almost all the defects, but not all, which reasoning is nonsensical, and CMO’s construction should thus be rejected.

2. “*resistance*”

CMO argues that LGD’s construction of resistance, “a circuit component designed to provide opposition to electric flowing through itself and to minimize current surge in the TFT array from electrostatic discharge,” should be rejected because of the language “in the TFT array”. CMO’s argument disregards the language of Claim 1 which states “via a resistance to provide protection from *electrostatic discharges between said row and column activation lines*.” (emphasis added). These discharges could occur where the row and column lines cross, *i.e.*, in the TFT array. The specification also describes that electrostatic discharge damage occurs in the TFT array. 4:49-53; Figs. 2, 3. Thus, LGD’s construction accurately reflects that the protection is needed in the TFT array and removes the potential of any ambiguity at trial—unlike CMO’s definition where the same issues as in the CPT litigation will likely arise.

3. “*inner electrostatic guard ring*”

CMO correctly asserts that the inner guard ring must provide a discharge path but inappropriately attempts to limit the path to “a conductive line.” CMO’s reasoning is flawed as the specification describes a conductive discharge path including more than a single conductive line. For example, Figure 5 depicts the row and column lines connecting to the inner guard ring 144 through shunt switching elements 148, which can be any of a variety of elements such as diodes that can include semiconductor material. Thus, there is no support to limit an inner guard ring to “a conductive line” as asserted by CMO.

4. “*forming a pattern of pixels on said substrate*”

CMO misinterprets the patent’s disclosure to suggest this term should be limited to redundant subpixels. There is no suggestion in the patent, however, that a redundant pattern of pixels is required. In fact, the specification provides that the present invention may or may not include redundant subpixels. *See* Fig. 5 (depicting an embodiment of the invention with no

redundant subpixels); 5:42-43 (“Depending upon the display structure, at least one pixel or one subpixel (Fig. 4) will be defective.”). Thus, CMO’s construction cannot be correct.

Additionally, CMO blurs the distinction between preventing the electrostatic discharge defects themselves and preventing the defects from rendering a display product inoperable. Redundant subpixels do not prevent damage or shorts in a display but minimize the resulting effect so that a display can be operable when there is a defect. 4:58-60; 6:53-56. The specification clearly sets forth that the goal of the claimed invention is providing a discharge path to protect against shorts or damage that can occur between the row and column lines of a display. 2:47-62. Accordingly, LGD’s construction should be adopted.

5. *“forming a plurality of row and column intersecting pixel activation lines”*

CMO alleges that LGD’s construction, “depositing and etching electrically conductive material patterned in rows and columns that control pixels,” improperly adds the limitations of “depositing and etching” and “electrically conductive material.” This contention is meritless. The specification clearly supports that depositing and etching are the techniques used for forming the row and column lines. 1:35-42; 3:25-28. CMO’s expert, Dr. Hatalis, states that depositing and etching are the conventional techniques in fabricating thin film transistors. (D.I. 388 at ¶ 25.) Thus, depositing and etching appropriately provide guidance as to the forming of the row and column lines, and LGD’s construction should be adopted.

C. U.S. Patent No. 5,825,449 – the “Substrate Wiring Design” patent

1. *“one of said first and second conductive layers” / “one”*

CMO misinterprets statements in the prosecution history to support its construction. In the Amendment, dated Nov. 17, 1997, the Applicant stated that claim 11 (allowed as claim 6) was amended to “essentially include the recitations of canceled claim 12.” JX C2 at p.5. CMO

argues that this requires the amended claim to include *all* of the limitations of claim 12. To the contrary, the work *essentially* means that *not all* of the elements were included. If the applicant had amended the claim to include all of the elements of claim 12, it would have stated that the claim was amended to include the elements of claim 12—without the word “essentially.”

Further, claim 1 unambiguously refers to only one conductive layer being connected to a TFT terminal. While CMO suggests that “one” must include more than one to cover the embodiment disclosed in Figure 5, this argument was already rejected by the California court in the CPT litigation. As previously explained, the “one of” element was added in an amendment and disclaimed Figure 5. (D.I. 384 at 16-18.) The Federal Circuit also has noted that “[i]t is often the case that different claims are directed to and cover different disclosed embodiments.” *John A. Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1383-1384 (Fed. Cir. 2008). This clearly applies to the claims of the ‘449 patent. Claims do not cover some embodiments shown in the figures. Embodiments not covered by the claim do not support rewriting the work “one” to mean more than one.

In addition, CMO misunderstands the goal of the ‘449 patent as reflected by its improper construction. A correct goal of the ‘449 patent is to form proper connections throughout the array while minimizing cost. 2:11-36. Nowhere does the specification suggest limiting *the number* of conductive layers, but instead discusses limiting the processing steps to reduce costs. 2:11-36; 5:39-47. Further, CMO’s reliance on “comprising” is misplaced and was already rejected by the California Court. (D.I. 384 at 18.) Accordingly, LGD’s construction “one, but not both, of the first and second conductive layers” should be adopted.

2. “conductive layer”

CMO claims that conductive layer is a broad term but then improperly attempts to narrow it. LGD’s construction, “a thickness of electrically conductive material” can be applied

consistently throughout the claims, while CMO's construction, including one or more patterned features, is contrary to the plain meaning of claim 1. (D.I. 384 at 19-20.) Further, CMO's addition of the language "of the same material" is ambiguous. It fails to identify whether all the patterned features be made of the same material or that there must be only a single material. It is also incorrect as conductive layers in the art can include more than one material. *See* Ex. L-39 (U.S. Patent No. 5,162,933); LGD's '274 patent; AUO's '629 patent.

3. *"active layer"*

CMO improperly focuses on an inadvertent removal in the California Court's construction of the word "the," which clearly should have no affect on the construction. CMO alleges that the active layer is "located along the gate electrode of a thin film transistor" but fails to point out that the California court rejected the argument that the active layer is limited to a narrow description of location. The California court stated "nothing in the claim or specification limits the active layer to the region of the semiconductor layer between the source and drain electrode," and nothing in the claims or specification limits the active layer to be along the gate electrode. Accordingly, the construction of the California Court "a discrete portion of the semiconductor layer that is formed by patterning and located at least in part above the gate electrode. In operation, the discrete portion is penetrated, at least in part, by the electric field introduced by the gate electrode" should be adopted.

4. *"gate pad" / "source pad"*

As discussed in LGD's opening brief, LGD's construction clarifies the type of signal received by the gate and source pads. (D.I. 384 at 20.) LGD's construction is consistent with its California construction as it includes the point that the signals are received and does not require that the signals be communicated to the gate or source electrodes. Thus, CMO's assertion of judicial estoppel is unwarranted. Further, contrary to CMO's claims, collateral estoppel does not

apply as there was no appeal of the claim construction order. *See Kollomorgan*, 147 F. Supp. 2d at 468.

D. USP 6,803,984– the “Serial Production Line” patent

1. *“on a single production process line”*

CMO’s proposed construction improperly limits this term to a production line that processes the substrates (1) “in only one direction” and (2) “without branching.” While the patent is related to a “serial production process line” as opposed to a “parallel production process line,” neither the claims nor the specification requires that the processing equipment be arranged in “only one direction without branching.” The claims only require that both substrates pass through the serial material coating portion and the liquid crystal dispensing portion of the production line; therefore, so long as both substrates pass through both of those portions, it does not matter what “direction” the substrates travel or whether any portions of the production line “branch” from another portion of the production line.

Moreover, the “single” line structure means that the production line is a “serial” production line, as opposed to “parallel” production lines, and not “one direction without branching.” Ex. L-46 (The American Heritage Dictionary (1994), page 764) (definition of “single,” “2. Consisting of one part or section. 3. Separate; individual”). Further, CMO wrongly asserts that the “Summary of the Invention” discusses passing both substrates through the same “machines.” The specification *never* uses the word “machine,” and instead describes passing the substrates through portions of the production line. CMO improperly and confusingly mixes and matches various passages from the specification in an attempt to limit the “portions” to “machines” or equipment. CMO’s improper constructions should be rejected.

2. *“sealing material coating portion” / “liquid crystal dispensing portion”*

CMO improperly limits the “portion” of the single production line to a specific “machine.” This is improper for at least the reasons discussed in LGD’s opening claim construction brief. Moreover, CMO admittedly bases its construction that a “portion” is limited to a “machine” on language from the “Background of the Invention” that discusses equipment (*i.e.*, seal dispenser) combined with language from one of the disclosed embodiments (*i.e.*, color filter passes through the dropping step) that discusses “steps” of the production process. 2:54-56; 6:32-35. Clearly, these combined passages do not limit the “portion” of the claimed invention to a “machine.” Consequently, CMO’s proposed constructions for these terms should be rejected.

3. *“passing the first and second substrates through a sealing material coating portion of the single production process line in serial order”*

For the reasons provided in LGD’s opening claim construction brief and in LGD’s response to AUO’s opening claim construction brief, CMO’s proposed construction for this term is improperly narrow and should be rejected: (1) a portion is not limited to an “equipment / machine;” (2) the substrates are not required to enter the “equipment/machine” “at one end, and out at the other end;” and (3) the first and second substrates are not required to be provided one after the other “without anything in between.”

4. *“a second substrate”*

CMO’s proposed construction is not supported by the intrinsic record because the second substrate is not required to “*immediately* follow the first substrate.” Nothing in the claims or specification requires the second substrate to be provided “immediately” after the first substrate. The claims only require that the first and second substrates are provided in “serial order.” As previously discussed, the ordinary meaning of serial order is “one after the other,” which is not contradicted by the specification. Moreover, the “alternately provided into a production line”

does not require the second substrate to “*immediately* follow the first substrate.” The American Heritage Dictionary (1994) defines “alternatively” as “allowing or necessitating a choice between two *or more* things.” Ex. L-47 (American Heritage Dictionary (1994), page 25) (emphasis added). Consequently, CMO’s proposed construction should be rejected.

E. U.S. Patent Nos. 5,905,274, 6,815,321, and 7,176,489 – the “Single Photoresist Hillock Protection” patents

As described in LGD’s response to AUO’s arguments, this family of patents is directed to an LCD with improved performance and yield that is manufactured with fewer process steps.

1. ***“the first metal layer being wider than the second metal layer by about 1 to 4 μm ” / “a total width of the first metal layer is greater than a total width of the second metal layer by about 1 to 4 μm ”***

CMO attempts to create ambiguity where there is none by distorting LGD’s proper constructions and repeats several flawed arguments made by AUO. Contrary to CMO’s assertions, LGD’s construction clarifies that the difference in width should be measured from the entire width of each layer, and includes the critical aspect that the sides must be exposed to the gate insulating layer. As discussed in LGD’s opening brief, and in LGD’s response to AUO’s opening brief, exposure to the gate insulating layer is a fundamental part of the invention, which CMO completely ignores. (D.I. 384 at 22.)

CMO’s arguments rely primarily on extrinsic evidence to support a proposed construction that is inconsistent with the claim language. The claim states that the total width of the first metal layer is greater than a total width of the second metal layer.² Since there is no ambiguity in the intrinsic record, CMO’s reliance on extrinsic evidence, *i.e.*, statements made in

² All parties agree that in view of the claims and specification there should be no difference in the construction for the claims elements that include wider than from the claim elements that include total width. (D.I. 376 (Ex. F at 8; Ex. G at 6; Ex. H at 5-6).)

a foreign file history, is misplaced. Further, the Federal Circuit has been reluctant to rely on statements made in foreign prosecution histories given the differences in law. *See TI Group Auto. Sys. (N. Am.), Inc. v. VDO N. Am., L.L.C.*, 375 F.3d 1126, 1136 (Fed. Cir. 2004)(quotations omitted)(the Court did not consider the statements and stated “note only the ‘varying legal and procedural requirements for obtaining patent protection in foreign countries might render consideration of certain types of representations inappropriate.’”)

CMO also improperly seeks to limit the term to a “double-step.” The specification does not support importing this limitation based on the variety of etching processes described. While the figures depict one structural example of the invention, the claims are not limited to only that structure. Different etching procedures can result in different types of structures. Here, the claims only require that the difference in the entire widths be greater than 1 and less than 4 without any specific geometrical restraints. Therefore, LGD’s construction should be adopted.

2. “double-layered structure”

In an attempt to contest LGD’s construction, CMO erroneously interprets a statement in the prosecution history. In doing so, CMO ignores that “*Miyago* does use an aluminum layer in a double-layered gate....” JX F1 (Response dated November 17, 1998 at 3) (italics added). The Applicant went on to describe that *Miyago* also includes an additional layer, a tantalum clad structure. Thus, the discussion of the *Miyago* reference demonstrates that a double layered gate can include additional layers, and that a clad structure is distinguished as the sides of the first aluminum layer are not exposed to the gate insulating layer. LGD further addressed CMO’s improper limitation in its opening brief pointing out that the claim language of the ‘274 patent is “including a double layered structure”. (D.I. 384 at 23 (emphasis added).) LGD properly construes the term in view of the specification and prosecution history and should be adopted.

3. “forming a single photoresist having a predetermined width on the second metal layer”

CMO’s construction clearly ignores elements of the term, such as “having a predetermined width,” and therefore should be rejected. In contrast, LGD’s proper construction of “forming a pattern of single photosensitive material that has a specified width on the second metal layer” is fully supported by the specification. ‘274 patent at 5:58-62; Fig. 4A.

F. U.S. Patent No. 7,218,374 – the “ODF Seal” patent

The patent discloses an improved method of applying a sealant to a liquid crystal panel, whereby the sealant is initially deposited outside of the display area, so as to avoid excess sealant from spreading into the display area or cutting area. 2:41-68; (*see also* D.I. 384 at 29.) CMO’s constructions fail to account for the nature of this invention and instead attempts to distinguish this patent from its own ‘179 patent, discussed *infra*.

1. “main sealant” / “auxiliary sealant”

CMO’s proposed constructions are ambiguous and at odds with the ‘374 patent. As acknowledged by AUO, the “main sealant” encloses the display area in connection with the ODF manufacturing process. Indeed, CMO’s own ODF patent (the ‘179 patent) acknowledges that “in the ODF method, the sealing member . . . is required to fully enclose a display region of one substrate without leaving any opening thereof.” ‘179 patent at 1:48-52. The ‘179 patent thereby distinguishes ODF from prior processes (*e.g.*, vacuum injection methods).

CMO’s proposed construction for “main sealant,” however, could represent only a portion of the seal, or it could include a subsequent “plug” seal added after vacuum injection

(contrasted with ODF) to fill an injection hole.³ Consequently, its construction is flawed and LGD's proposed construction should be adopted.

Similarly, CMO's proposed construction for "auxiliary sealant" is incorrect. The '374 patent addresses the fact that a sealant dispensing device deposits *an excess of sealant*, which is *not necessary* to confine (or enclose) the display area, and the presence of which may contaminate the display or cutting areas. The solution is to begin the sealant deposit process (the "auxiliary sealant") outside of the display area, so that this excess sealant does not cause the enumerated problems. LGD's proposed construction properly reflects the plain import and scope of the patent and should be adopted.

LGD's proposed construction does not, as CMO suggests, render superfluous the limitation that the auxiliary sealant is formed "in a dummy region and connect[s] to the main sealant." The main sealant navigates the outer boundaries of the active area, contrasted with the "dummy region," which is the "outer part of the substrate." Consequently, the term "dummy region" means an area "outside" the main sealant (or display area), while the "auxiliary sealant" is "deposited in an area outside of the main sealant," because it is not part of the sealant that *encloses* the display area.

2. *"wherein the auxiliary sealant and the main sealant are contiguous"*

LGD and AUO agree that "contiguous" means continuous so as to be connected without a break in the process. (D.I. 378 at 60.) In contrast, CMO's proposed construction, "touches but

³ CMO's reliance on Figure 4 of the '968 patent (D.I. 383 at 34) is similarly misplaced. Figure 4 relates to a vacuum injection method, not an ODF method, and does not include the "main sealant" and "auxiliary sealant" disclosed by the '374 patent. Indeed, the structures of Figure 4 represent, *inter alia*, injection ports, rather than seals, and the sealants 2a and 2b are not formed contiguous to and do not contact each other, as described in the '374 patent. If CMO considers sealant 2b a main sealant, then there is no auxiliary sealant outside of it; and if CMO considers sealant 2b to be an auxiliary sealant, then there is no main sealant that contacts it.

does not overlap,” is overly narrow and without basis in the specification. Nothing in the specification precludes overlapping of the main sealant and auxiliary sealant. *See* Fig. 2B (showing end of sealant pattern overlapping beginning of pattern). Indeed, CMO’s proposed construction improperly ignores the plain language of the claims and specification and is based entirely on a limited interpretation of a dictionary definition (“touching along a boundary or at a point”). In fact, touching along a boundary could be an overlapped region.

In the context of the claims and specification, the auxiliary and main sealant are contiguous when the sealant material is continuously deposited onto one of the substrates. The specification requires the sealant to be continuously deposited to avoid initially depositing excess sealant material along the main seal pattern. 5:5-7; Figs. 3B, 4A, and 5A. Accordingly, when read in context, the plain meaning for contiguous is “continuous” and should be adopted.

3. *“wherein the auxiliary UV sealant is formed in a dummy region and extends outside from the main UV sealant”*

CMO’s proposed construction for this phrase is overly narrow and not supported by the specification. All of the embodiments and figures disclosed in the specification clearly describe that the sealant is continually dispensed so as to first form an auxiliary sealant and then form a main sealant, not the other way around as CMO asserts. Depositing the main sealant first would be inconsistent with one of the main objectives of the invention, which is to prevent contamination of the liquid crystal caused by contact with the sealant material. 2:50-54; 5:27-29; Fig. 3B. Consequently, CMO’s construction should be rejected.

II. CONSTRUCTION OF DISPUTED CLAIM TERMS OF THE CMO PATENTS

A. U.S. Patent No. 5,619,352 – the “O-Plate Compensator” patent

The parties fundamentally disagree on two critical issues: whether the film claimed in the patent is positive birefringent; and whether the tilt angle of the birefringent material is limited to

the range of 25 to 65 degrees. CMO completely disregards the intrinsic evidence on these two critical issues.

1. “a layer of a birefringent material”

CMO refers to background information, such as the section labeled “2.1 LCD Technology Overview,” in an attempt to justify an overly broad construction. For example, CMO contends that because “O-plate compensators may also include A-plates and/or *negative* C-plates as well as O-plates,” a layer of a birefringent material as recited in claim 3 should not be limited to positive birefringent. (D.I. 383 at 38 (emphasis in original).) This assertion, however, ignores that the O-plate compensator in claim 3 can include one or more layers of A or C-plate, as further evidenced by dependent claims 11 and 12. Because claim 3 recites that the compensator is “comprising” a layer of birefringent material, the compensator can also include additional compensation layers. The fact that additional negative C-plates can be added to the claim 3 compensator does not support CMO’s contention. The patent explains that although “the [negative] C-plate compensator may be used to improve contrast it does not improve grayscale stability.” 5:65-66. The patent, however, is directed to grayscale stability, stating specifically:

The compensator design of this invention, which includes a positively birefringent twisted and/or splayed O-plate layer, makes possible a significant improvement in gray scale properties and contrast ratios of liquid crystal displays (LCDs) over a wide range of viewing angles.

10:51-55. Thus, contrary to CMO’s contention, the fact that additional negative C-plates can be added to the compensator of claim 3 further evidences that the term “a layer of a birefringent materials” is positive birefringent to improve grayscale stability.

Moreover, CMO’s arguments ignore the descriptions of the “invention” in the specification that consistently demonstrate the applicant considered the layer of birefringent material to be positive birefringent. (D.I. 384 at 78-80); see also, Kmetz Decl. ¶¶ 4, 5. For

example, the patent references two publications to explain biaxial inorganic O-plate compensators with an obliquely deposited thin film existing at the time of the invention. 7:41-61. Importantly, the inorganic O-plate compensators described in these two publications are positive birefringent. Kmetz Decl. ¶ 6. Moreover, the patent purports to duplicate the performance of existing biaxial inorganic O-plate compensators by making use of polymerized [positive] liquid crystal materials at reduced cost and with more design flexibility. 10:55-59.

2. *“optical symmetry axis”*

CMO’s attempt to define the “optical symmetry axis” for biaxial materials as the principal optic axis is inconsistent with the plain and accepted meaning in the LCD industry. Further, CMO’s construction neglects to reflect the disclosed “invention” which consistently shows uniaxial materials. It should also be noted that the definition in the technical background section of the patent incorrectly defines optical symmetry axis for biaxial materials because, contrary to the recited definition, the refractive indices perpendicular to the principal optic axis for biaxial materials are not identical.

3. *“tilt angle varies along an axis normal to said layer”*

Contrary to CMO’s assertion, the patentee deliberately disclaimed tilt angles outside the range of 25 to 65 degrees during prosecution of the applications. (D.I. 384 at 81-82.) In particular, the patentee unequivocally stated that claim 3 (originally claim 5) was distinguishable over “Heynderickx et al.” in that the tilt angle is substantially greater than zero, “between approximately 25 degrees and approximately 65 degrees,” deliberately disclaimed an argument that lacked support in either the ‘603 or ‘352 patents that tilt angles outside this range.

4. *“a desired viewing characteristic over a specified field of view”*

CMO’s construction of “a contrast ratio that exceeds a threshold for a specified range of viewing angles” includes the term “threshold” that is subjective in nature and renders the claim

indefinite. Nowhere does the patent describe the term “threshold contrast ratio” or any acceptable threshold contrast ratio for a given range of viewing angles.

B. U.S. Patent No. 6,008,786 – “Gamma Correction and Delay Circuits” patent

The parties fundamentally disagree on two critical issues: whether *all* of the color video signals (*e.g.*, red, green and blue color signals or RGB color signals) can be subject to a change; and whether the term “buffer means” should be construed pursuant to 35 U.S.C. §112, ¶ 6. LGD contends that the patent discloses and the claims require at least one color signal is subject to compensation circuitry *and* at least one color signal is not subject to compensation circuitry but instead is subject to delay circuitry. In fact, the patent describes the disadvantage of subjecting all color signals to change. 2:46-3:11. CMO’s proposed construction improperly encompasses this distinguished prior art structure. *SciMed*, 242 F.3d at 1343 (claims should not be read so broadly as to encompass the distinguished prior art structure).

The various means-plus-function limitations in claim 1, CMO agrees that “driver means,” “data control means,” “computing means,” and “adjusting means” are interpreted in accordance with 35 U.S.C. § 112, ¶ 6, but contends “buffer means” should be treated differently. This assertion ignores (a) the presumption that § 112, ¶ 6 applies and is not rebutted as it fails to denote a “sufficiently definite structure” (*see Al-Site Corp. v. VSI Intern., Inc.*, 174 F.3d 1308, 1318 (Fed. Cir. 1999)); and (b) that the patentee specifically used different language for this limitation when seeking not to invoke § 112, ¶ 6, (*see* “delay logic” in claim 7). There is no reason that “buffer means” should be interpreted differently from other means-plus-function terms.

1. ***“changing the level of gray scale data signals for at least one color relative to the other colors to a different gray scale level” (claim 1)***

CMO provides no insight into the meaning of this term but instead attempts to dispute LGD’s construction, “adding or subtracting compensation values to modify the gray scale levels of one or more, but not all, color video signals,” but to not avail. CMO contends that “color video signal” in LGD’s construction is unsupported and adds ambiguity. This is surprising given the specific references in claim 1 to colors, gray scale signals to correspond to these colors, and the language related to a display. Claim 1, read in light of the specification, makes clear that “the gray scale data signals for at least one color” and “any uncorrected gray scale signal related to the other colors” mean color video signals such as RGB color signals.

Although CMO contests the term “compensation values” in LGD’s construction, CMO implicitly acknowledges the need for compensation values. (D.I. 383 at 40 (“the ‘786 patent describes a computing circuit for performing an addition or subtraction of the gray scale signal for at least one color to generate a corrected gray scale signal.”).) In fact, “performing an addition or subtraction” requires a compensation value. This is consistent with all of the embodiments in the patent. 5:11-43; Figs. 5, 6, 7. Furthermore, claim 1 itself supports compensation values by requiring that the objective of changing the level is “**to compensate** for a variation in intensity between the colors due to wavelength related differences in transmissivity between the colors through the light transmitting medium.” (emphasis added.)

CMO’s contention that LGD’s proposed construction violates the doctrine of claim differentiation is incorrect. Claim 4 supports LGD’s proposed construction that the term “changing” means “adding or subtracting.” Claim 4 recites “wherein: said correction performed by said data control means includes an addition or subtraction of the voltage representing at least one gray scale level for at least one color.” This clarifies that the term “changing” means “an

addition or subtraction,” and further limits claim 1 to “an addition or subtraction of the *voltage* representing *at least* one gray scale level for at least one color.” In other words, what claim 4 purports to further limit is the compensation value is in the form of “voltage” and the amount of the voltage to be changed is equal to or more than one gray scale level. LGD’s construction is consistent with the intrinsic evidence, including the “Summary of the invention” and the prosecution history. (D.I. 384 at 84-86.)

2. *“delaying any uncorrected gray scale signal related to the other colors for the time delay caused by said corrected gray scale data signal being corrected”*

In addition to CMO’s arguments already addressed by LGD in its Opening Brief, CMO adds that LGD’s construction lacks support for “holding or deferring.” The central dispute is whether at least one color signal, *e.g.*, red, green or blue color signal, is not subject to compensation circuitry but instead is subject to delay circuitry. LGD contends that this is precisely what the claim requires and, therefore, proposes that the term requires holding or deferring at least one signal that is not subject to compensation. To interpret the claim as CMO proffers would result in the claims improperly encompassing the distinguished prior art structure. 2:46-3:11.

3. *“driver means”*

CMO contends that LGD’s proposed construction improperly adds the requirement “sets of” and is an attempt to exclude any equivalents to the disclosed structure. To the contrary, it is CMO’s proposed construction that improperly removes these words from the explicit language of claim 1. Further, LGD’s proposed construction simply identifies the recited function and the corresponding structure disclosed in the specification that performs that function as is appropriate in construing the scope of the limitation in accordance with 35 U.S.C. §112, ¶ 6. Contrary to the impression conveyed by CMO, LGD did not argue that “driver means” is not

entitled to equivalents of the structure disclosed in the specification that performs the recited function.

4. “data control means”

The underlying dispute relates to what structure is disclosed that performs the claimed function. As recited in claim 1, the data control means includes the computing means and the buffer means. The data control means function recited in claim 1 is:

receiving gray scale data signals related to the setting of a gray scale for the display cell and outputting said gray scale data signals to said driver with a predetermined timing

The disclosed structure is shown in Figure 5 of the patent. The received gray scale data signals are designated B0-B5, R0-R5 and G0-G5. The structure shown receiving these signals are elements 32, 33 and 22. The signals with predetermined timing are output to the X-Driver from elements 36 and 26. The computing means portion of the data control means, discussed *infra*, includes elements 32, 33 and 34; whereas the buffer means portion of the data control means, also discussed *infra*, includes element 24. As such, contrary to CMO’s contention, all elements of Figure 5 are required to perform the recited function for the data control means. In addition, the specification states that figures 6-8 relate to the condition determination “in the data control unit according to the subject invention,” and should be included as the disclosed structure for the data control means. CMO’s proposed construction simply does not include all the structure required to perform the recited function.

5. “computing means,” “buffer means,” / “adjusting means”

The parties agree on the recited function for the “computing means,” but disagree as to what structure is required to perform that function. CMO contends that only element 32 in Figure 5 is required based on the patent’s statement that “only an additional circuit such as a computing circuit, is needed to effectively correct the differences in the transmissivity / applied

voltage characteristics for the colors.” 5:58-61. This assertion ignores the immediately following explanation of the invention in the patent which continues:

The above correction is made while avoiding the problems in complexity of control methods in the background art. That is, to implement the subject invention, only a condition determination circuit is needed in the data control circuit. It is not necessary to change the structure of the X-driver or the structure of the cell.

5:61-67.⁴ Furthermore, the condition determination table 33 outputs a condition to the addition/subtraction table 34 that sets the actual amount of correction. 4:44-48. Consequently, contrary to CMO’s contention, the specification requires not only computing circuit 32, but also condition determination table 33 and addition/subtraction table 34, whether it is in the form of software or hardware, in order to perform the identified function by both parties. 4:30-5:43. LGD’s proposed construction is further supported by the language of claim 2 that requires “wherein said data control means comprises adjusting means for varying the amount of correction accorded to the gray scale data signals...” As clearly shown in Figures 6 and 7, varying amounts of correction are determined in accordance with the levels of the gray scale data signals by condition determination table 33 and addition/subtraction table 34.

6. “buffer means”

As discussed *supra*, the term “buffer means” should be interpreted in accordance with 5 U.S.C. § 112, ¶ 6. The dispute, again, relates to the disclosed structure required to perform the recited function. CMO contends that the corresponding structure of “buffer means” should include the buffer circuit 26 and the delay circuit 24 in Figure 5. The specification explains,

⁴ In fact, the patent does not disclose that the computing circuit 32 can perform the identified function alone. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113, 1116 (Fed. Cir. 2002). (“The court must then determine what **structure**, if any, **disclosed** in the specification corresponds to the claimed function”) (emphasis added).

however, that the delay circuit 24 performs the recited function of “delaying any uncorrected gray scale signal related to the other colors for the time delay caused by said corrected gray scale data signal being corrected.” 4:14-21; 5:23-26. As shown in Figure 5, element 24 delays the signals to compensate for the time required to correct gray scale data by elements 32, 33 and 34, while buffer circuit 26 synchronizes the data output with buffer circuit 36. This further shows that the recited delaying function is performed only by the delay circuit 24.

Finally, the term “buffer means” is indefinite as it fails to provide sufficient corresponding disclosures in the specification. The “duty to link or associate structure to function is the *quid pro quo* for the convenience of employing § 112, ¶ 6.” *Default Proof Credit Card Sys. Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298, 1302 (Fed. Cir. 2005). “While corresponding structure need not include all things necessary to enable the claimed invention to work, it must include all structure that actually performs the recited function.” *Id.* Failure to comply with these requirements will render a “means plus function” claim invalid for indefiniteness. *Id.* Accordingly, the term “buffer means” is indefinite for failing to make sufficient disclosure under 35 U.S.C. § 112, ¶¶ 2 and 6.

7. “adjusting means”

CMO contends that the same structure for “computing means” applies to the “adjusting means” (*i.e.*, computing circuit 32) even though the claimed functions are different. As discussed with “computing means,” Figures 6 and 7 show that varying the amounts of correction are determined in accordance with the levels of the gray scale data signals by condition determination table 33 and addition/subtraction table 34. Elements 33 and 34, therefore, are the structures disclosed that perform the recited function.

CMO also contends that claim 3 should depend from claim 2 as opposed to claim 1, and that the claim 3 “adjusting means” should be the same as the “delay means” in claim 1. Even if

claim 3 depends from claim 2, treating “adjusting means” in claim 3 the same as “delay means” in claim 1 would still violate the doctrine of claim differentiation.

C. U.S. Patent No. 6,013,923 – the “ESD Protection and Testing” patent

CMO’s proposed construction ignores unambiguous claim language and redefines terms in a manner that is contradicted by its own expert.⁵

1. *“during formation of said gate lines” / “during formation of said source lines”*

The claim language “during formation of said gate [source] lines” is unambiguous. In an effort to avoid this clear language, CMO first seeks to ignore it, and then uses backwards logic in an attempt to redefine it. The ultimate result of CMO’s proposed constructions is that they would entirely eviscerate the terms.

CMO initially posits that LGD’s construction, “at the same time when the electrically conductive material that forms the gate [source] lines is deposited and etched,” should be rejected because it excludes the preferred embodiment. This argument is fundamentally flawed. As a matter of law, when “the claim language is unambiguous, [the Federal Circuit has] construed the claims to exclude all disclosed embodiments.” *Lucent Tech., Inc. v. Gateway, Inc.*, 525 F.3d 1200, 1215-1216 (Fed. Cir. 2008)(citations omitted). In *Lucent Tech.*, the Court determined the claim language required recalculating each recited step for each pulse in a speech encoding method even though the sole embodiment only described recalculating one of the five recited steps in the claim for each pulse. *Lucent Technologies* highlighted:

⁵ Accompanying its opening claim construction brief, CMO provided a declaration of Dr. Miltiadis Hatalis (D.I. 388) in support of constructions for LGD’s ‘737 and ‘449 patents, discussed *supra*. In that declaration, Dr. Hatalis provided descriptions of manufacturing processes that are also relevant to CMO’s ‘923 patent. LGD’s reference to Dr. Hatalis’ declaration is not intended to be an acknowledgment that statements made therein are correct.

This court has repeatedly held that courts may not redraft claims to cure drafting error made by the patentee, whether to make them operable or to sustain their validity.[] To do so ‘would unduly interfere with the function of the claims in putting competitors on notice of the scope of the claimed invention.’

Id. (citations omitted); *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1375-76 (Fed. Cir. 2004) (construing language in a claim for a method of baking dough to require the temperature of the dough itself be within the given range even though it resulted in an unusable product).

Here, the unambiguous claim language demonstrates that LGD’s construction is the only reasonable construction. The term “during” connotes a contemporaneous relationship. *See* Ex. L-50 American Heritage Dictionary (1980) (“within the time of; at some time in”). CMO cannot now redraft the claims simply to read them on an embodiment disclosed in the patent. Furthermore, even if claim 1 does not read on an embodiment, the Federal Circuit has considered the scope as a whole rather than only the claim at issue. *See John A. Helmsderfer v. Bobrick Washroom Equipment, Inc.*, 527 F.3d 1379, 1383-84 (Fed. Cir. 2008) (holding that a claim with the disputed term did not cover a preferred embodiment and noting that other claims without the disputed term could cover the preferred embodiment). Independent claim 14 of the patent does not include the “during formation of” limitations and, therefore, could cover the preferred embodiment.

CMO’s proposed construction also uses reverse logic and contradicts its own expert. CMO argues that the time when gate lines are formed includes when they are connected to the shorting elements. This is backwards from what the claim recites:

during formation of said gate lines, connecting one end of each gate line directly to a shorting element and another end of each gate line to a shorting element via a protection element

The claim clearly requires that the connections are made when the gate lines are formed, not that the time when the gate lines are formed is determined by when the connections are made. Applying its convoluted logic, CMO's proposed construction for "during formation of said gate lines" would not only include the deposition and patterning of gate lines and gate electrodes, but would also include subsequent forming steps such as (a) the deposition of a gate insulating layer, (b) the deposition and patterning of semiconductor layers, and (c) the deposition and patterning of source lines, and source and drain electrodes. To broaden its claim for infringement, CMO would also likely include (d) the deposition and patterning of a passivation layer, and (e) the deposition and patterning of the pixel electrode layer. The unambiguous language "during formation of said gate lines" should not be interpreted to include these numerous additional formation steps.

CMO's proposed construction also contradicts statements made by its own expert, Dr. Hatalis. In his declaration, Dr. Hatalis explained that a gate electrode is formed by depositing and patterning a conductive layer with a single masking/etching step. (D.I. 388 at ¶¶ 20, 26, 28, 32.) The gate electrodes are formed with the gate lines from the same conductive layer. Consequently, the gate lines are formed by depositing and etching a single conductive layer--as explained in LGD's proposed construction. As also described by CMO's expert, various other structures are formed after the gate lines and gate electrodes are formed, including the source lines and source electrodes. These are formed by a separate depositing and masking/etching step. (D.I. 388 at ¶¶ 31, 38.) CMO's proposed constructions would improperly overlap the time when gate lines and source lines are formed.⁶ The patent, however, discloses

⁶ Contrary to CMO's assertion that "ESD damage protection circuits are present from the first manufacturing stage of the TFT switch array (gate line formation)" supports its construction, the specification describes the ESD protection circuit to include the gate lines connecting directly to

(footnote continued on next page)

that formation of the gate lines and formation of the source lines are separate and distinct steps and thus should not overlap. 1:58-64; 3:16-19; 5:55-57; 6:14-18.

2. “gate lines” / “source lines”

CMO misconstrues LGD’s proposed constructions. First, CMO claims that “a pattern of electrically conductive material that conveys *data* signals to transistors within the TFT array” is overly broad because it could convey *any* signal. A data signal is not any signal; and even CMO’s expert acknowledged that source lines are also referred to as data lines.⁷ D.I. 388 at ¶ 69. Similarly, CMO distorts LGD’s proposed construction by implying that it limits the gate/source lines to an area within the TFT array. Instead, LGD’s construction acknowledges that the lines convey signals to *transistors* within the TFT array. CMO also argues that the word “pattern” in LGD’s proposed construction supposedly adds an improper limitation. However, as discussed above, and explained by CMO’s expert, gate lines and source lines are formed by depositing and patterning (*e.g.*, by using a photoresist and etching) a conductive layer. (D.I. 388 at ¶¶ 25, 77-80.) On the other hand, CMO’s proposed constructions would include electrically conductive material other than the gate metal or the source metal, respectively, and should be rejected.

3. “shorting element”

LGD’s construction is “a pattern of conductive material for electrically connecting, with low resistance, the gate lines to each other or the source lines to each other.” CMO again tries to

a shorting element of gate metal, to avoid any isolation of the gate lines and protect from any build up of electrostatic charge. These structures are made of the same conductive material patterned at the same time. The specification and claim clearly do not support that any additional manufacturing stages, such as source line formation, is needed to protect the TFT array during gate line formation.

⁷ Further, LGD’s construction is not overbroad as the specification fully supports that the gate and source lines connect to test circuitry for testing the TFT array. 6:19-25.

argue that “a pattern of” is erroneous language even though its own expert uses the term to describe the TFT manufacturing process. Clearly, a pattern accurately reflects a device feature, such as a shorting element, in a TFT device. CMO also alleges that “low resistance” creates some confusion, apparently ignoring the plain meaning of shorting. As shown in LGD’s Opening Brief, the dictionary definition of short circuit requires a low resistance connection. (D.I. 384 at 75-76.) LGD’s construction thus provides the necessary guidance on the meaning of a shorting element and should be adopted.

4. *“electrically coupling said shorting elements”*

As addressed in LGD’s Opening Brief, electrically coupling said shorting element must exclude connecting through protection elements and should be “electrically connecting the shorting elements without intervening protection elements.” (D.I. 384 at 76.) LGD is not attempting to import limitations from the specification as asserted by CMO but merely construes the term in view of the claims themselves. CMO disregards the plain language of claim 2, and LGD’s construction should be adopted.

5. *“protection element”*

CMO alleges that LGD’s construction, “a circuit component designed to protect against electrostatic discharge and to allow for testing” is incorrect but fails to provide any reasoning. All the examples identified by CMO, and other types of protection elements, would be covered by LGD’s construction. On the other hand, CMO’s interpretation is inconsistent with the specification as it would allow direct connections. CMO’s construction would not provide “ESD damage protection ... *throughout the entire manufacturing and testing process* of the semiconductor switch array....” 4:27-31, *see also* 2:4-18; 3:4-10; 5:33-41; 6:25-36. Thus, LGD’s construction should be adopted.

D. U.S. Patent No. 6,134,092 – the “LED and Reflector Backlight” patent

CMO’s proposed constructions do not comport with the invention as claimed and described in the specification because, *inter alia*, they improperly: (a) define a point light source as a semiconductor die portion of an LED; (b) allow for transparent diffusive reflective surfaces; and (c) require the peripheral portion of a waveguide to be determined based on an unclaimed cover that fits over the waveguide.

1. *“a series of point light sources” / “light-emitting diodes mounted on an electrical-conductive strip of material”*

CMO’s constructions ignore the plain language of the claims which requires the point light sources emit the light that is introduced into the waveguide or optical cavity, *i.e.*, the desired light. 9:36-43. It is the desired light that illuminates a display such as an LCD. (D.I. 383 at 52.) Defining the point light sources as simply a “solid state device” (*e.g.*, semiconductor die) is inconsistent with this fundamental principle. (D.I. 384 at 70-71.) Accordingly, CMO’s construction is overly broad and should be rejected.

CMO objects to LGD’s proposed construction on the grounds that LGD incorporates a functional limitation into the construction, *i.e.*, “providing a desired light to illuminate the waveguide or optical cavity.” However, LGD’s construction is consistent with the plain language of the claims and the specification. First, the claim language requires that the point light sources “introduce light in regions of said waveguide . . . whereby the peripheral portion of the waveguide is substantially uniformly illuminated.” 9:39-43. Therefore, the point light source itself must provide the light that illuminates the waveguide. Second, the specification repeatedly states that the point light sources “emit” or “inject” light into the waveguide. 2:5-9; 3:18-22; 7:27-37; Figs. 11, 13, and 13A. Accordingly, LGD’s construction follows the plain language of the claims as supported by the specification. *Advanced Cardiovascular Sys. v.*

Medtronic Vascular, Inc., 182 Fed. Appx. 994, 996-997 (Fed. Cir. 2006) (contrary to patentee's assertion, the court did not err by incorporating a functional limitation into the construction of a device).

CMO's objection that the point light sources are not required to be "separate components" is also baseless. The plain language of the claims requires that there are multiple sources of point light, not a single component emitting light in multiple directions. Moreover, all of the embodiments and figures in the specification disclose each point light source as a packaged LED structure. Figs. 11, 13, and 13A. Consequently, LGD's construction should be adopted.

Similarly, CMO's proposed construction for the phrase "light-emitting diodes mounted on an electrical-conductive strip of material" should be rejected for the reasons discussed above; namely, to the extent that the point light source is a white LED, it must include the entire LED (*i.e.*, structure containing the semiconductor die and the phosphor coating) to provide the desired light introduced into the waveguide. Consequently, LGD's construction should be adopted.

2. "diffusive reflective surfaces" / "diffusive reflective optical cavities"

The only objection CMO raises to LGD's proposed construction relates to the requirement that the diffusive reflective surface be "non-transparent." LGD contends that the plain language of the claims requires that the diffusive reflective surfaces be interpreted to be non-transparent. According to the claim language, the diffusive reflective surfaces cannot be transparent because the light needs to be reflected away instead of refracted through the surfaces. If the light from the point light sources is transmitted through the diffusive reflective surfaces, the particular orientation of the diffusive reflective surfaces relative to the waveguide, required by the claim language, would make no difference. 9:36-44. Moreover, the plain and ordinary meaning for a reflective surface (*e.g.*, surface that throws or bends back light) does not include

transparent surface (*e.g.*, surfaces that *transmit light* so that objects on the other side can be seen clearly). Ex. L-51 (The American Heritage Dictionary (1994), pages 693, 855).

3. “*peripheral portion*”

CMO’s proposed construction improperly imports a limitation from a preferred embodiment in the specification and is inconsistent with the claim language itself. *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1343 (Fed. Cir. 2001). First, the claims do not recite a cover. If a cover is not present, then CMO’s construction is undefined. Next, CMO’s construction seeks to define a portion of the waveguide by a separate structure. Contrary to CMO’s approach, the peripheral portion of the waveguide is not dependent on the size of an unclaimed cover. Simply because a cover may be over a periphery of the waveguide does not necessarily mean that the peripheral portion is defined by that coverage. CMO’s reliance on the figure in the patent is misdirected.

LGD’s construction is consistent with the plain and ordinary meaning of the word “periphery.” Despite CMO’s interpretation, LGD’s construction does not limit the peripheral portion to the edge itself, but rather to a “boundary” adjacent the edge, which is different than the peripheral edge of claim 25. Further, CMO improperly relies on Figure 13 to conclude that the peripheral portion cannot include the edge of the waveguide because the guide members prevent the edge from being completely uniformly illuminated. The claim language recites that the “peripheral portion of the waveguide is *substantially* uniformly illuminated.” (emphasis added). 9:42-43. CMO ignores the “substantially” language and concludes that the arrangement shown in Figure 13 prevents “uniform light distribution along the edge” at the points where the apexes 66 of the guide members 60 are in contact with the waveguide 46. (D.I. 383 at 53.) Clearly, the small area where the apexes contact the edge of the waveguide do not preclude the entire edge from being “substantially uniformly illuminated,” as required by the claim language.

4. *“[The diffusive reflective surfaces] oriented relative to the series of point light sources and the waveguide so as to introduce light [in regions of said waveguide between pairs of said point light sources]”*

CMO’s objects to LGD’s proposed construction as a “complicated” description that is not supported by the specification. This contention has no merit because LGD’s construction makes clear what is ambiguous in CMO’s proposed construction, namely that the diffusive reflective surfaces: (1) are arranged “substantially perpendicular to the top surface of the waveguide” (*e.g.*, extend upright), and (2) “introduce scattered light reflected directly from the point light sources into the waveguide” (*e.g.*, light received directly from the diffusive reflective surfaces is scattered (diffused) and reflected into the waveguide). 1:44-52. Consequently, LGD’s construction for the phrase “oriented relative to the series of point light sources and the waveguide so as to introduce light” should be adopted.

5. *“guide members positioned along a periphery of the optical cavity”*

The main issue is whether the guide members must be “unattached” from each other. CMO’s proposed construction is overly broad because it does not require the guide members that are “spaced apart” to necessarily be unattached. CMO’s argument that the structures are not necessarily unattached because they may be each attached to the same planar member misses the point. Although the guide members may be attached to the same surface, they are still unattached from each other. The claim language and all of the figures support LGD’s construction that the guide members are “separate structures, unattached from one another” Figs. 2 and 4. Consequently, LGD’s construction should be adopted.

E. U.S. Patent No. 6,734,926 – the “Side Circuit Board” patent

The parties agree that, in order to reduce the display thickness, the patent requires that control circuit boards are not located on the back of the reflecting or supporting plate. CMO clearly and unmistakably disavowed locating any circuit board on the back-side of the direct-

type backlight unit in order to reduce the thickness of the LCD apparatus. 4:18-22; 8:5-16; 2:8-11; 2:14-16; 3:18-22; 4:62-64; 6:25-27; 63-65. Accordingly, the entire control circuit board that controls the display panel, not just “certain control circuitry,” must be located on side-portions of certain frame-like structures of the LCD apparatus, and not on the back of the backlight unit.

LGD’s proposed constructions reflect this disclaimer, while CMO’s do not.

1. ***“a circuit board installed within the gap for controlling operations of the display apparatus,” / “a circuit board installed on the side portion of the reflecting plate for controlling operations of the display apparatus,” / “a circuit board installed on the side portion of the supporting plate for controlling operations of the display apparatus”***

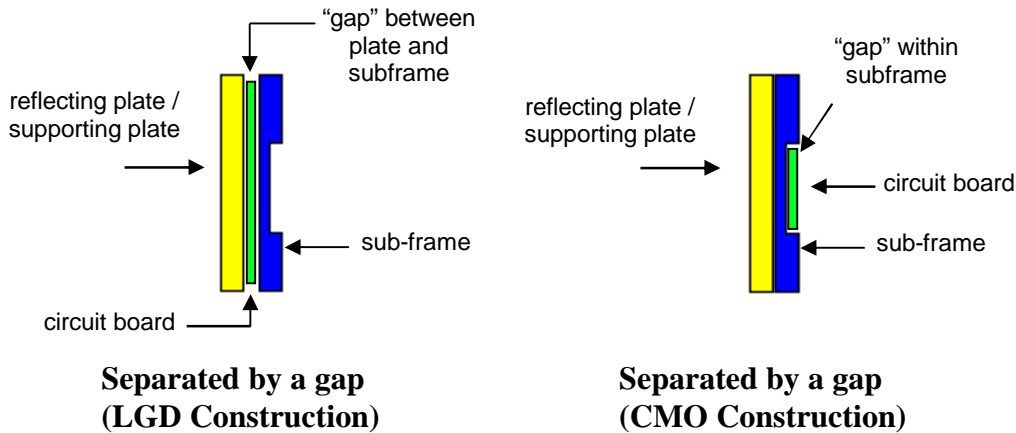
CMO’s proposed constructions for these terms are overly broad because they allow for a control circuit board to be located on the back of the supporting plate or reflecting plate. These terms should be construed to require that “no control circuit board is located on the back of the supporting plate or reflecting plate” because CMO clearly and unmistakably disavowed having any control circuit boards on the back. In contrast, CMO’s proposed constructions improperly restrict this disclaimer to only “a rigid or printed circuit board for controlling certain operations of the display apparatus.” The specification repeatedly describes that the circuit board is a component that controls the display panel, not just “certain operations” of the display panel. CMO’s construction, if adopted, allow for some control boards to be on the side and others on the back. Also, this language is confusing because it is unclear what CMO means by controlling “certain” operations. The specification, however, makes clear that none of the control circuitry can be located on the back. 4:10-11; 4:28-32; 5:65-66; 6:9-13; 1:54-67. Accordingly, the entire control circuitry (i.e., control circuit board) that controls the display panel, not just “certain control circuitry,” must be located on side-portions of structures as required by the claims.

2. “an array of light tubes disposed behind the display panel”

CMO’s objections to LGD’s construction are baseless because the invention is clearly limited to a backlight unit that is a direct-type as opposed to an edge light-type. The specification repeatedly refers to the “claimed invention” as a “direct-type back light unit” and “direct-type LCD apparatus.” 3:18-20; 3:63-65; 8:4-6; 8:13-21. *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (“[w]hen a patent thus describes the features of the “present invention” as a whole, this description limits the scope of the invention.”). Moreover, a person of ordinary skill in the art would understand that a direct-type backlight unit is arranged with light tubes positioned directly behind the display panel, as opposed to on opposite sides of the display panel, and the light tubes are fluorescent lamps (*e.g.*, CCFL). All of the embodiments and figures in the specification disclose this arrangement. Figs. 1, 4, 6, 8, 10, 12, and 13. Consequently, LGD’s construction should be adopted.

3. “being separated from the side portion by a gap”

CMO’s proposed construction is ambiguous and could lead to a nonsensical result as shown in the figure below. According to CMO’s construction, there need not be any space between the supporting frame and the reflecting plate; instead, there could be merely an indentation within the subframe itself. This construction is contrary to the claims and is not supported by the specification. LGD’s proposed construction reflects common sense and is consistent with all figures that show the gap as a space between a plate and frame. Figs. 4-7. Consequently, the Court should adopt LGD’s construction for this term.



4. “a circuit board installed on the side portion of the reflecting plate” / “supporting plate for controlling operations of the display apparatus”

The ambiguity in CMO’s proposed construction that the circuit board only be “mechanically supported” is highlighted by its dispute with LGD’s construction. CMO contends that LGD’s construction is improper because it implies the circuit board “must directly contact” the portion to which it is installed. The plain language of the claim and all disclosures in the specification clearly reflect that when a circuit board is installed on a structure, it is “mounted” to it, *i.e.*, directly attached. 9:57-60; 2:61-65; 6:25-27; Figs. 8-11. Further, CMO’s unclear language could allow for a circuit board to be attached to another structure that is itself attached to the reflecting / supporting plate. For example, in the above figure on the right, according to CMO’s construction the circuit board would be “installed on” the reflecting / supporting plate. Consequently, the Court should adopt LGD’s construction for these terms.

5. “integrated supporting unit”

Consistent with the claims and specification, LGD contends that the integrated supporting unit must be a “unitary structure.” 6:67-74; 7:27-32; Figs. 12-13. CMO’s construction is ambiguous because it includes multiple structures (“supporting frame portion,” “reflecting plate portion,” and “supporting plate portion”), making the device a non-unitary structure. If the

integrated supporting structure is not construed to be a unitary structure, then there would be no difference between the integrated supporting unit of claims 29 and 36 and the structures disclosed in the non-integrated supporting unit claims. Consequently, LGD's proposed construction of "a unitary structure that provides support" should be adopted.

6. *"display apparatus"*

The specification of the patent limits the scope of the invention by describing, as a feature of the "present invention" as a whole, the display apparatus as a direct-type LCD apparatus shown in Figure 3, which is a direct-type LCD monitor or television. 3:63-65. *Verizon Servs. Corp.*, 503 F.3d at 1308 ("[w]hen a patent thus describes the features of the "present invention" as a whole, this description limits the scope of the invention."). The specification explains that the "direct-type LCD apparatuses" of the invention are "direct-type LCD monitors and televisions." 1:37-39. Moreover, all of the embodiments and figures disclose the display apparatus as a direct-type LCD apparatus that is a monitor or television. Figs. 3, 4, 6, 8, 10, 12, 13 (element 40).

7. *Claims 29 and 36 are indefinite and should not be corrected*

The claim language in independent claims 29 and 36 should not be corrected as CMO requests because the change is not obvious and is subject to reasonable debate. The Federal Circuit has repeatedly held that courts may not redraft claims to cure a drafting error made by the patentee, whether to make them operable or to sustain their validity. *Chef Am.*, 358 F.3d at 1373. To do so "would unduly interfere with the function of claims in putting competitors on notice of the scope of the claimed invention." *Hoganas v. Dresser Indus., Inc.*, 9 F.3d 948, 951 (Fed. Cir. 1993). The exception to this rule is when there is an obvious administrative or typographical error not subject to reasonable debate. *Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1331 (Fed. Cir. 2005). The corrections for claims 29 and 36 are subject to reasonable debate. For instance,

independent claim 29 can also be understood to require a reflecting plate component that is separate from the integrated supporting unit, as suggested by the plain language of the claim. Similarly, independent claim 36 can be understood to require a supporting plate component that is separate from the integrated supporting unit, as suggested by the language of the claim. Thus, the Court should not redraft claims 29 and 36.

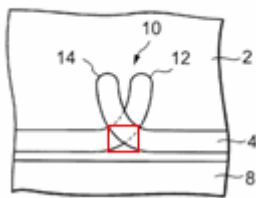
F. U.S. Patent No. 7,280,179 – the “Overlapped Sealant” patent

CMO’s proposed constructions improperly seek to recapture claim scope surrendered during prosecution to overcome a prior art reference, U.S. 6,674,507 to Yoshizoe (“*Yoshizoe*”).

1. “forming a sealing member having a main portion enclosing a display region” and “the sealing member has a main portion enclosing a display region”

CMO proposes a broad construction for these terms that merely requires forming a sealing member “in a closed shape having four side walls” This construction, however, improperly seeks to recapture scope surrendered during prosecution to overcome the *Yoshizoe* reference. *Chimie v. PPG Indus.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005) (claims should not be construed “one way in order to obtain their allowance and in a different way against accused infringers”); *Computer Docking Station Corp. v. Dell, Inc.*, 519 F.3d 1366, 1374-1375 (Fed. Cir. 2008). Specifically, CMO’s proposed constructions improperly read on Figure 4, reproduced

FIG.4



here, that CMO distinguished during prosecution by arguing that “the *Yoshizoe* reference teaches that the ‘overlapping area’ lies outside the display region rather than extending along one side of the display region as taught in claim 1.” See App. 10/921,508, 3/1/07 Amendment, pages

13-14. This statement requires that the area highlighted by the red box in the figure is not part of an overlapping area along the main portion of the sealing member. *Purdue Pharma L.P. v. Endo Pharms., Inc.*, 438 F.3d 1123, 1136 (Fed. Cir. 2006) (“a patentee may limit the meaning of a

claim term by making a clear and unmistakable disavowal of scope during prosecution.”) LGD’s constructions for these terms properly account for CMO’s disavowal by requiring the sealant material be deposited parallel to the edges of the display region, and thus should be adopted.

2. “*overlapping area extends along one side of the display region*”

CMO’s argument regarding LGD’s proposed construction makes clear that its refusal to construe the term is merely a veiled attempt to assert the claim for infringement purposes in a manner inconsistent with positions taken during prosecution. The only objection CMO raised relates to the “sealant material be applied on top of previously applied sealant material,” which CMO argues is an “overly restrictive limitation” for overlapping. CMO’s argument is baseless as LGD’s proposed construction is consistent with the common meaning of the word “overlapping.” *See* The American Heritage Dictionary (1994) (“to extend over and cover part of”) Ex. L-52. Consequently, “overlapping” requires that sealant extends over and covers part of the previously applied sealant. Furthermore, this is what CMO explained during prosecution by reference to Figure 3 and elements 208 (initial end) and 210 (overlapping area). *See* App. 10/921,508, 3/1/07 Amendment, pages 10.

CONCLUSION

For the foregoing reasons, LGD requests that the Court adopt LGD's claim constructions.

September 4, 2008

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